The Future of African Palm in Honduras

A January 2008 report from the US Embassy Tegucigalpa

Summary: Most of the building blocks are now in place for Honduras to begin substantial production of biodiesel from African Palm trees. In 2005 a Honduran company succeeded in producing biodiesel to fuel 240 company vehicles and six Tegucigalpa public buses. Another company was the first African Palm biogas project in the world to be certified for carbon credits. Cultivation of African Palm along the Honduran North Coast has more than doubled since the 1990s to more than 90,000 hectares. The Honduran Congress last month passed a law that grants favorable tax treatment to biofuels; implementing regulations are expected by March. However, with the price of palm oil for human consumption currently above that for biodiesel, future production is uncertain.

Production of Biodiesel from African Palm

One Honduran company's 2005 experiment using biodiesel (B100) to fuel company vehicles and six city buses was successful. No modifications were required for relatively newer company vehicles; however, they did need to change the filters after introducing biodiesel because of its cleaning effect. The city buses required an initial maintenance process because of their age. Nonetheless, the company says that a very old bus, literally taken from a junkyard, soon sported an engine that was "shining on the inside." Based on lessons learned from the initial biodiesel project, the company has almost finished constructing a new facility that will be capable of producing over 30,000 gallons of biodiesel (B100) per day. This plant will be kept in a state of readiness until such time as the company determines that it is more profitable to produce biodiesel than palm oil for human consumption.

Current Uses of African Palm

African Palm is or can be used to produce biodiesel and renewable energy as well as palm oil and various byproducts for human consumption. Though not every company does so, it is possible to use every part of the African Palm plant. Palm oil can be used as an input for margarine and potato and banana chips and other snacks. Oil from the palm nut is used in perfumes. Leftover fiber from the nut is sold as animal feed; leftover fiber from the palm fruit is sold as fertilizer or burned to produce energy. Even the tree itself is cut down after its 25-30 year productive life and allowed to decompose in place, providing nutrients for the next generation of trees.

A Source for Multiple Forms of Renewable Energy

The traditional way to produce energy from African Palm is to burn the leftover fiber (dry waste) from the fruit to create steam. This steam can either power the processing plant directly, be passed through a turbine to create electricity, or both. Any excess electricity can be sold to the grid.

More recently a medium-sized palm coop in Honduras has begun using African palm to produce biogas. As the palm oil extraction equipment is washed each day, effluent is diverted to a large holding pond covered with a tent. The holding pond contains a bacterium that causes the organic matter in the water to decompose, creating methane. The methane is trapped by the tent and burned to create 2.2 megawatts of electricity, which is then sold to the grid. The biogas project became profitable only after the company qualified for carbon credits (certified emissions reductions under the Kyoto Protocol), which are currently being purchased by a European firm. This is the first African Palm biogas project in the world to be certified for carbon credits, and other companies are interested in following suit.

What the Future Holds

Palm cultivation in Honduras has more than doubled from 40,000 hectares in the 1990s to more than 90,000 hectares today. This growth is due to record prices for palm oil as well as private financing and technical assistance for landowners, typically ranchers, who enter the African Palm industry.

The biggest change, however, may be yet to come. In 2005 the Government of Honduras signed an agreement with Malaysia to import one million Malaysia Palm seeds. This makes Honduras the only country besides Malaysia and Indonesia to receive Malaysian Palm seeds. The seeds arrived in 2006 and will eventually account for 28,000 hectares; 7,000 hectares have already been planted. At least initially, the Government of Honduras has decided to give the seeds only to small farmers. Malaysian Palm reportedly has many advantages over African Palm. The trees mature in 2-3 years as opposed to 4-5. They are shorter, which means the fruit is easier to harvest. Most important, the ratio of fruit to nut is greater, which signifies a higher yield of palm oil and/or biodiesel per hectare.

A recent study suggests that Honduras has 540,000 hectares suitable for palm cultivation. If the land were used to produce biodiesel instead of palm oil, 300,000 hectares could satisfy all of Honduras's current demand for diesel fuel (B100). Only 60,000 hectares would be required for a mix of 20 percent biodiesel and 80 percent petrodiesel (B20). Whether this happens will depend mostly on the relative prices of palm oil and diesel, and partly on the Government of Honduras's policies, including biofuel regulations and fuel subsidies that artificially lower the price of diesel fuel at the pump.

The potential for exporting palm-based biodiesel to the United States is limited because of its poor performance in cold temperatures. Additionally, in addition to lower distribution costs, the new Honduran biofuels law appears to make the Honduran market more attractive.

The expansion of palm cultivation may come at an environmental cost. As ranchers convert pasture land to palm, there is concern that ranchers and farmers will have an incentive to create new pasture lands out of forests and other protected areas.